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D E C I S I O N
of 12 February 1997

Case Number: T 0181/96 - 3.4.2

Application Number: 92202195.1

Publication Number: 0544341

IPC: G01M 3/28, G01M 3/22

Language of the proceedings: EN

Title of invention:

Method and apparatus for externally and internally testing for leaks in connections between tubular members

Patentee:

Hasha, Brian B., et al

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 84

Keyword:

"Clarity (no); state of the art standing in the way of using functional terminology (yes)"

Decisions cited:

T 0204/90 of 30 July 1991, T 0893/90 of 22 July 1993, T 0602/92 of 20 August 1993, T 0841/95 of 13 June 1993

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0181/96 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 12 February 1997

Appellant: Hasha, Brian B.
6114 Willowcrest Court
Spring, Texas 77389 (TX)

Representative: Smith, Norman Ian
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 2 October 1995
refusing European patent application
No. 92 202 195.1 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: M. Chomentowski
B. J. Schachenmann

Summary of Facts and Submissions

- I. European patent application No. 92 202 195.1 (publication No. 0 544 341) was refused on the grounds of lack of clarity of, inter alia, the submitted claim 1, and of lack of novelty of the subject-matter of said claim having regard to D1 = US-A-4 136 552.

The Examining division has pointed out in claim 1, which concerned an apparatus for hydrostatically testing the integral connection between two sections of pipe which were threaded together such that the connection presented an orifice communicating with the connection's seal, the feature that the apparatus comprised a tubular member (60) having sealing means (64), said tubular member and sealing means being so dimensioned and configured that when, in use, the apparatus applied no substantial radial pressure to the annular surface of the connection in the vicinity of the interference seal of said connection. According to the Examining Division, in particular, the teaching derivable from some of the drawings, whereby radial pressure was applied to the seal, was in contradiction to the above claimed feature, so that the claim lacked clarity. Moreover, the claim related to an apparatus and neither the connection nor the pipes to be connected were part of the apparatus itself; similarly, features relating to the use of the apparatus were no clear technical features. Therefore, the claimed apparatus was not clearly distinguished from the apparatus known from D1 and lacked thus novelty.

- II. The appellant lodged an appeal against this decision.

III. In the communication accompanying the summons to the oral proceedings which had been requested auxiliarily by the appellant, the Board of appeal expressed the opinion that claim 1 comprising the amendments mentioned in the statement of grounds of appeal appeared to lack clarity.

IV. With a telefax dated 6 February 1997, the appellant in particular cited a new document EP-B-0 505 721 which might be taken into consideration at the oral proceedings.

V. During the oral proceedings of 12 February 1997, the appellant submitted a new set of claims with the only independent claim reading as follows:

"1. Apparatus for hydrostatically testing a a sealing (read "testing a sealing") element of a threaded connection between two sections of pipe which have been connected together to form a pipe joint which forms part of or will form part of a pipe string, the connection presenting an orifice communicating with a sealing element or elements of the connection, said apparatus comprising housing means (60) which is located around the pipe joint for sealingly engaging the pipe sections on either side of the connection, valve means (68) associated with said housing means for admitting into the housing means a pressurised hydraulic testing fluid, and means (32) for determining a possible leak in the connection by detecting a loss of hydrostatic testing fluid from the housing means through a sealing element of the connection, characterised in that said housing means comprises a tubular member (60) having sealing means (64), said tubular member and its sealing means locating around said joint and being so dimensioned and configured that the sealing means sealingly engages the connection in the immediate vicinity of and on either side of the

orifice to define an annular test chamber (66) which is in fluid communication with the orifice leading into the sealing element or elements (18, 20) of the connection, said annular test chamber (66) and the hydrostatic test fluid cooperating to apply pressures principally to a selected localised zone of small area in the immediate vicinity of the orifice leading into the sealing element or elements of the connection, whereby no substantial radial pressure is applied to the annular surface of the connection in the vicinity of at least one sealing element of the connection which is under test."

VI. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of this new claim 1, and argued in substance as follows in support of its request:

None of the prior art had recognised the importance of restricting the annular chamber, within which test pressure is generated, principally to a selected localised zone of small area in the immediate vicinity of the radial orifice leading to the sealing element or elements of the connection. Present claim 1 comprises this feature in a functional form; this is allowable, in particular by taking into account decision T 204/90 of 30 July 1991, unpublished, which enumerates three necessary conditions for functional features defining a technical result being permissible in a claim:

- (i) from an objective viewpoint, such features cannot otherwise be defined more precisely without restricting the scope of the invention;
- (ii) these features provide instructions which are sufficiently clear for the expert to reduce them into practice without undue burden, if necessary with reasonable experiments, and

(iii) the state of the art does not stand in the way of using such functional and therefore general and broad terminology.

In particular, in the present case, the state of the art, as e.g. D1, does not stand in the way of using such functional hence general and broad terminology, and the claim is thus clear.

It is also to be noted the decision T 893/90 of 22 July 1993, unpublished, whereby, in a claim, a feature for specific components "being present in amounts and proportions just sufficient to arrest bleeding", i.e. a functional feature defining a technical result, had been found admissible with respect to clarity.

It is further to be noted that the present application is a divisional application and that the parent application thereof had been granted by the present Board of appeal in the decision T 602/92 of 20 August 1993, unpublished (see point 3.1 of the reasons), whereby in particular the claim, with a similar wording of the terms, had been found clear and its subject-matter distinguished from D1. Since the apparatus of present claim 1 is closely related to the technique having formed the basis for the decision T 602/92, the clarity of present claim 1 and the distinctive character of its subject-matter as compared to the technique of Figure 3 of D1 should be recognized. It is also to be noted with reference to the new document EP-B-0 505 721 that a similar wording has been used for claiming a technique of the same type and the European patent has been granted, whereas the present application is objected to; this indicates at least some lack of uniformity of the findings of the organs of the European Patent Office.

Reasons for the Decision

1. The appeal is admissible.

2. *Clarity*

2.1 Present claim 1 concerns an apparatus for hydrostatically testing a sealing element of a threaded connection between two sections of pipe which have been connected together to form a pipe joint which forms part of or will form part of a pipe string; the connection presents an orifice communicating with a sealing element or elements of the connection.

Said apparatus comprises:

housing means (60) which is located around the pipe joint for sealingly engaging the pipe sections on either side of the connection;

valve means (68) associated with said housing means for admitting into the housing means a pressurised hydraulic testing fluid; and

means (32) for determining a possible leak in the connection by detecting a loss of hydrostatic testing fluid from the housing means through a sealing element of the connection.

The claimed apparatus is characterised by a plurality of additional features. In particular, the housing means comprises a tubular member (60) having sealing means (64), said tubular member and its sealing means being located around said joint and being so dimensioned and configured that the sealing means

sealingly engages the connection in the immediate vicinity of and on either side of the orifice to define an annular test chamber (66) which is in fluid communication with the orifice leading into the sealing element or elements (18, 20) of the connection;

moreover, said annular test chamber (66) and the hydrostatic test fluid are cooperating to apply pressures principally to a selected localised zone of small area in the immediate vicinity of the orifice leading into the sealing element or elements of the connection, whereby no substantial radial pressure is applied to the annular surface of the connection in the vicinity of at least one sealing element of the connection which is under test.

- 2.1.1 It is first to be noted that, whereas some of the features of the claim concern the apparatus, other features concern the threaded connection between two sections of pipe which are connected together, i.e. the threaded connection which will be tested by the apparatus. Moreover, other features of the claim are those related to the use of said apparatus, in particular functional features of the apparatus which are defined by a result to be achieved. Thus, according to the last part of the claim, the tubular member and its sealing means are located around said joint and are so dimensioned and configured that the sealing means sealingly engages the connection in the immediate vicinity of and on either side of the orifice to define an annular test chamber (66) which is in fluid communication with the orifice leading into the sealing element or elements (18, 20) of the connection, said annular test chamber (66) and the hydrostatic test fluid cooperating to apply pressures principally to a selected localised zone of small area in the immediate

vicinity of the orifice leading into the sealing element or elements of the connection; thereby, no substantial radial pressure is applied to the annular surface of the connection in the vicinity of at least one sealing element of the connection which is under test.

2.2 The appellant has pointed out the above-mentioned decision T 204/90, which enumerates three necessary conditions for functional features defining a technical result being permissible in a claim:

- (i) from an objective viewpoint, such features cannot otherwise be defined more precisely without restricting the scope of the invention;
- (ii) these features provide instructions which are sufficiently clear for the expert to reduce them into practice without undue burden, if necessary with reasonable experiments, and
- (iii) the state of the art does not stand in the way of using such functional and therefore general and broad terminology.

According to appellant's argument, this is the case in the present situation, whereby, in particular, none of the prior art recognises the importance of restricting the annular chamber, within which test pressure is generated, principally to a selected localised zone of small area in the immediate vicinity of the radial orifice leading to the sealing element or elements of the connection; thus, the state of the art does not stand in the way of using such functional hence general and broad terminology.

2.3 However, this argument is not convincing for the following reasons:

It has not been disputed that the apparatus shown in Figure 3 of D1 comprises all the apparatus features of present claim 1, except those related to the importance of restricting the annular chamber, within which test pressure is generated, principally to a selected localised zone of small area in the immediate vicinity of the radial orifice leading to the sealing element or elements of the connection. This means that, when using the apparatus known from D1 for testing a threaded connection between two sections of pipe which are connected together such that the connection presents an orifice communicating with the connection's sealing element or elements, said connection of said two tubes being more extended along the longitudinal axis of the tube than the one shown in Figure 3 of D1, the sealing means would sealingly engage the connection to define a relatively small area in the immediate vicinity of the orifice and in accordance with the further features of the characterising part of present claim 1. Thus, the apparatus of present claim 1 is not as such distinguished from the apparatus known from D1, but is used for testing a connection with different dimensions. Therefore, in the present case, the above-mentioned third condition expressed in decision T 204/90, that the state of the art does not stand in the way of using such functional hence general and broad terminology, is not satisfied.

Indeed, it is to be noted, in the same respect, that the apparatus of present claim 1 for hydrostatically testing a sealing element of a threaded connection between two sections of pipe presenting an orifice communicating with the connection's sealing element or elements, when used for testing a connection presenting a different configuration of the connection's seal, in

particular a connection wherein the connections's sealing element or elements are much nearer to the orifice, can become such that the hydrostatic test fluid does not only apply pressures principally to said relatively small area in the vicinity of the orifice leading into the sealing elements of the connection and does apply a substantial radial pressure also to the annular surface of the connection in the vicinity of at least one of the interference seals between the mating surfaces on the corresponding male and female ends of the sections of pipe which tends to substantially affect the bearing pressure of such interference seal. Therefore, depending on the connection to be tested, an apparatus with the features recited in present claim 1 shall satisfy, or not, the technical conditions of said claim. Thus, the definition of the apparatus in the claim is ambiguous.

- 2.4 With respect to functional features, the appellant has further referred to the above-mentioned decision T 893/90 (see point 3 of the reasons), whereby, in a claim concerning a method of producing a pharmaceutical composition for controlling bleeding in non-hemophilic mammals, a feature for specific components "being present in amounts and proportions just sufficient to arrest bleeding", a functional feature defining a technical result, had been found admissible with respect to clarity. However, this argument cannot convince because said decision mentions further that said feature constitutes also a testable criterion which has to be satisfied by the claimed pharmaceutical composition, that its testing might appear prima facie bothersome, but it has nothing out of the ordinary for the field of medicines and involves only routine trials and that, thus, a limitation of the claim by introduction of specific amounts and/or proportions of the components is not necessary. However, contrary to this former case, wherein there is an effect on

bleeding in non-hemophilic mammals, i.e. on a credibly easily available feature which generally has known limits and is thus controllable, there cannot be seen in the present case any general type of pipe connections having generally well defined ranges of dimensions and therefore being generally available for verification of the functional features of the apparatus as such.

2.5 The appellant has further argued as follows: the present application is a divisional application and the parent application thereof had been granted by the Board of appeal 3.4.2 in the above-mentioned decision T 602/92 (see point 3.1 of the reasons), whereby the claim had been found clear and its subject-matter distinguished from D1; in particular, the Board had considered that the relative terms such as "small" specify that the test area is small as compared to the area of the connection and that, thus, the sealing elements comprised in the connection can be at a location wherein, as mentioned in the claim, there is no substantial test pressure applied radially to the inner or outer annular surfaces of the connection in the vicinity of at least one of the sealing elements of the connection under test which pressure would tend to substantially affect the bearing pressure of that sealing element or elements; since the apparatus of present claim 1 is closely related to the technique having formed the basis for the decision T 602/92, the clarity of present claim 1 and the distinctive character of its subject-matter as compared to the technique of Figure 3 of D1 should be recognized.

However, this argument cannot convince, because the present case is different and thus independent from the case having formed the basis for the decision T 602/92. Incidentally, it is to be noted that, contrary to the present case, which concerns an apparatus, a method was

claimed in the case of T 602/92, and there can be seen no reason why findings relating to clarity and novelty of a method claim could readily apply to the same requirements for an apparatus claim.

2.6 It is to be noted that the appellant has also referred to a new document, EP-B-0 505 721, and has argued that in that case a similar wording has been used for claiming a technique of the same type and the European patent has been granted, whereas the present application is objected to, which is an indication for lack of uniformity of the findings of the organs of the European Patent Office. However, as mentioned above, each particular case has to be decided on its own merits and the conclusions of the Examining Division drawn in the case referred to above are neither binding on the Board nor can they readily be applied to the present case.

2.7 It is further to be noted that, according to decision T 841/95 of 13 June 1993 (cf. the Headnote and points 2.3 to 2.3.2.4 of the reasons), where a claim for an apparatus seeks to define the invention by reference to features of the use to which the apparatus is to be put, a lack of clarity can result; however, if the subject-matter of the application is an apparatus and it is not viable to define the apparatus in a way other than with reference to said use, an apparatus claim directed to a combination of apparatus and use defining unambiguously the apparatus can be clear. Contrary to that case, which concerned a self cleaning pipette tip suitable for use in aspirating and dispensing a liquid having in particular a surface tension " σ " and a mass density " ρ ", i.e. an apparatus suitable for use with a generally well defined object which in particular adapts its form to the apparatus, present claim 1 concerns an apparatus for hydrostatically testing a sealing element of a

threaded connection between two sections of pipe which have been connected together to form a pipe joint, that is, an element which in particular is not adapted in its form to the apparatus for testing it and thus does not provide enough information for sufficiently specifying the features of the apparatus.

2.8 Therefore, claim 1 lacks clarity in the sense of Article 84 EPC.

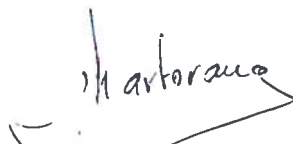
2.9 Since the present application does not satisfy the requirements of the Convention, it is not allowable (Article 97(1) EPC).

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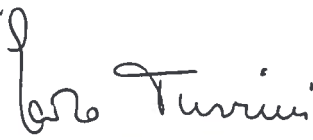
For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar:


P. Martorana

The Chairman:


E. Turrini

Mctk
B. Sch.